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EXAMINER	
GIANOLA, JOHN F	

ART UNIT	PAPER NUMBER
2145	

DATE MAILED: 01/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/981,444	TAYLOR ET AL.	
	Examiner	Art Unit	
	John F Gianola	2135	

-- The MAILING DATE of this communication appears n the cover sheet with the corresp ndence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 October 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-26* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-26* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *22 January 2002* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

1. Claims 1-26 have been examined.

2. Claims 1-26 have been rejected.

Claim Rejections - 35 USC § 101

3. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4. Claim 17 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claim 17 describes "...a data structure in an application...". Computer code alone constitutes "functional descriptive material" and as such, is not statutory subject matter. Functional descriptive material becomes statutory when it "...is recorded on some computer-readable medium..." (see the Manual of Patent Examining Procedure 2106). Even though Claim 17 includes the reference "...for use in a data probing method," this phrase, as written in the claim, does not define the computer program as material stored on a computer-readable medium. Instead, the phrase "...in an application..." characterizes the invention as capable of and intended for execution as a computer application, rather than as functional descriptive material that is "functionally interrelated to the medium."

5. Claim 20 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claim 20 describes "...a program for a computer...." Computer code alone constitutes "functional descriptive material" and as

such, is not statutory subject matter. Functional descriptive material becomes statutory when it "...is recorded on some computer-readable medium..." (see the Manual of Patent Examining Procedure 2106). Even though Claim 20 includes the reference "...for a computer in a machine readable format," this phrase, as written in the claim, does not define the computer program as material stored on a computer-readable medium. Instead, the phrase "...for a computer..." characterizes the program as capable of and intended for execution in a computer, rather than as functional descriptive material that is "functionally interrelated to the medium."

6. Claim 21 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claim 21 describes "a signal comprising a program...." Computer code alone constitutes "functional descriptive material" and as such, is not statutory subject matter. Functional descriptive material becomes statutory when it "...is recorded on some computer-readable medium..." (see the Manual of Patent Examining Procedure 2106). Even though Claim 21 includes the reference "...for a computer," this phrase, as written in the claim, does not define the computer program as material stored on a computer-readable medium. Instead, the phrase characterizes the program as capable of and intended for execution in a computer, rather than as functional descriptive material that is "functionally interrelated to the medium."

7. Claims 23, 24, 25, and 26 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The claims describe "a software application...." Computer code alone constitutes "functional descriptive material" and as such, is not statutory subject matter. Functional descriptive material becomes statutory when it "...is recorded on some computer-readable medium..." (see the Manual of Patent Examining Procedure 2106). Claims 23, 24, 25, 26 do not define the computer program as material stored on a computer-readable medium. Instead, the phrase "a software application..." characterizes the program as capable of and intended for execution in a computer, rather than as functional descriptive material that is "functionally interrelated to the medium."

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-16, 18, 19, and 22 are rejected under 35 U.S.C. 102(b) as being anticipated by Sun's "Jini Specifications Archive – v1.0" (see attached Notice of References Cited).

9. With regards to Claim 1, the Jini Specifications disclose:

A method of generating an adaptive software interface for at least two networked entities, the method comprising:

generating structured meta-data providing at least one semantic information element describing a characteristic of each said entity (see Section LU.1.2 "Attributes" lines 1-7);

collating the semantic information elements of each said entity where possible with corresponding semantic information elements of said at least one other entity (see Section AR.2.1.2 "Lookup Service" lines 1-4); and

analyzing said collated semantic information elements to establish the extent to which the interface capabilities of said at least two networked entities are compatible and generating in accordance with said established compatibility the adaptive software interface for the two entities (see Section AR.2.1.2 "Lookup Service" lines 1-10).

10. With respect to Claim 2, the Jini Specifications disclose the limitations in Claim 1 as noted above, as well as describing a protocol where entities ('services') exchange interfaces via a so-called Lookup Service, thus disclosing:

wherein the step of collating occurs dynamically during a preliminary exchange between the two entities prior to an interface being established between the two entities (see Section AR.2.1.2 "Lookup Service" lines 1-10 and Section AR 2.3.1 "Discovery and Lookup Protocols" lines 1-3).

11. With regards to Claim 3, the Jini Specifications disclose the limitations in Claim 1 as noted above, as well as:

wherein said structured meta-data includes associated meta-data for at least one said semantic information element (see Section LU.1.2 "Attributes" lines 1-7).

12. With regards to Claim 4, the Jini Specifications disclose the limitations in Claim 1 as noted above, as well as describing a system that utilizes Java Virtual Machines of differing capabilities, thus it discloses:

wherein the semantic information element describing the characteristics of said adaptive interface is provided in said meta-data in a form independent of the version of software used to generate said metadata (Section DA.2.2 "Devices Using Specialized Virtual Machines" lines 1-2).

13. With regards to Claim 5, the Jini Specifications disclose the limitations in Claim 1 as noted above, as well as describing semantic information compiled into classes by a Java compiler, thus disclosing:

wherein said semantic information element is generated by a compiler receiving input data from an interface description and a code template (see Section AR.1.2 "Environmental Assumptions" lines 12-18).

14. With regards to Claim 6, the Jini Specifications disclose the limitations in Claim 1 as noted above, as well as:

wherein said interface description includes a model of the data to be communicated across the interface and a code template (see Section AR.2.1.2 "Lookup Service" lines 3-11 and Section AR.2.3.1 "Discovery and Lookup Protocols" lines 4-5).

15. With regards to Claim 7, the Jini Specifications disclose the limitations in Claim 1 as noted above, as well as describing a protocol that initially registers entity (i.e. 'service') descriptions and interfaces, thus disclosing:

wherein said semantic information element provided by said meta-data has a form which can be mapped to an appropriate transport layer and exchanged between said networked entities prior to a higher level interface being established between said networked entities (see Section DJ.4.1 "Properties of the Underlying Transport" lines 1-5; Section AR.2.1.2 "Lookup Service" line 1; Section AR.2.3.1 "Discovery and Lookup Protocols" lines 9-11).

16. With respect to Claim 8, the Jini Specifications disclose:

generating meta-data providing a structure containing at least one semantic information element describing a characteristic of the first entity (see Section LU.1.2 "Attributes" line 1-7);

generating meta-data providing a structure containing at least one semantic information element describing a characteristic of the at least one other entity (see Section LU.1.2 "Attributes" line 1-7);

collating the semantic information elements of the first entity with the semantic information elements of the at least one other entity (see Section AR.2.1.2 "Lookup Service" lines 1-16);

analyzing each pair of collated semantic information elements to determine at least one behavioral characteristic of the first entity in the relationship (see Section AR.2.1.2 "Lookup Service" lines 1-4).

17. With regards to Claim 9, the Jini Specifications disclose the limitations of Claim 8 above, as well as:

Wherein the meta-data structure is provided in a form suitable for indicating at least one semantic element taken from the group including: a description, a range, a default value (see Section LU.1.1 "The Lookup Service Model" lines 1-10 and LU.1.2 "Attributes" lines 1-4).

18. With respect to Claim 10, the Jini Specifications disclose the limitations of Claim 8 as noted above, as well as:

wherein in the step of generating meta-data for the first entity, the at least one characteristic is a characteristic of an interface of the entity, and wherein in the step of generating meta-data for the at least one other entity, the at least one characteristic is a characteristic of an interface of the at least one other entity (AR.2.1.2 "Lookup Service" lines 1-10).

19. With regards to Claim 11, the Jini Specifications disclose:

generating at least one meta-data structure (see Section LU.1.2 "Attributes" lines 1-7); and

providing said structure with a range of at least one semantic information element describing a characteristic of the entity (see Section LU.1.2 "Attributes" lines 1-7);

associating a description with each said semantic information element (see Section AR.2.1.2 "Lookup Service" lines 1-4; Section LU.1.1 "The Lookup Service Model" lines 1-4; and Section LU.1.2 "Attributes" lines 1-7); and

associating a default value for said range (see Section LS.1 "Introduction" lines 11-17).

20. With respect to Claim 12, the Jini Specifications disclose the limitations of Claim 11 as noted above as well as:

wherein in said step of providing said structure with a range, the at least one semantic information element describing a characteristic of the entity is taken from the group including:

an enumeration convention; a text description;, modifiability; a semantic change; an impact condition; a measurement unit; a presentation condition; an alias; a response time; a pre-operation condition; and a post-operation condition (see Section LU.1.1 "The Lookup Service Model" lines 2-4 and LU.1.2 "Attributes" lines 1-10).

21. With regards to Claim 13, the Jini Specifications disclose the limitations of Claim 11 as noted above as well as:

wherein the meta-data structure is generated in and provided in a form suitable for another entity adapted to receive said meta-data structure to determine a varying ability of the entity to support an interface according to said range of semantic information element(s) (see Section LU.1.1 "The Lookup Service Model" lines 1-10 and LU.1.2 "Attributes" lines 1-10").

22. With respect to Claim 14, the Jini Specifications disclose the limitations of Claim 11 as noted above as well as describing common and/or distinguishing interfaces compiled by a Java compiler, thus disclosing:

wherein the semantic information provides a sufficiently detailed description to indicate at least one common and/or distinguishing interface description language feature which is generated by an interpretable compiler (see Section AR.2.3.1"Discovery and Lookup Protocols" lines 21-27 and Section AR.1.2 "Environmental Assumptions" lines 1-10).

23. With regards to Claim 15, the Jini Specifications disclose:

transmitting a request for said meta-data from the first entity to the second entity, the request indicating that at least one semantic element providing a discernable description of said at least one characteristic is to be provided (see Section AR.2.3.1 "Discovery and Lookup Protocols" lines 52-56);

analyzing said request to determine the structure of the meta-data requested;

generating discernable meta-data structured in accordance with said analysis which contains at least one semantic information element providing a discernable description of at least one characteristic of data associated with the second entity; and

returning said requested structured meta-data to said first entity (see Section LU.1.1 "The Lookup Service Model" lines 1-10);.

24. With respect to Claim 16, the Jini Specifications disclose the limitations of Claim 15 as noted above, as well as:

wherein at least one characteristic of the second entity is a characteristic of an interface capability of the second entity, and the at least one characteristic of the first entity is a characteristic of an interface capability of the first entity (see Section LU.1.1 "The Lookup Service Model" lines 1-10 and LU.1.2 "Attributes" lines 1-10).

25. With regards to Claim 17, the Jini Specifications disclose:

transmitting a request for said meta-data from the first entity to the second entity, the request indicating that at least one semantic element providing a discernable description of said at least one characteristic is to be provided (LU.1.1 "The Lookup Service Model" lines 1-10; Section LU.1.2 "Attributes" lines 1-9; and Section AR.2.3.1 "Discovery and Lookup Protocols" lines 52-56);

analyzing said request to determine the structure of the meta-data requested (See Section AR.2.3.1 "Discovery and Lookup Protocols" lines 20-24 and Section AR.2.1.2 "Lookup Service" lines 1-6);

generating discernable meta-data structured in accordance with said analysis which contains at least one semantic information element providing a discernable description of at least one characteristic of data associated with the second entity; and

returning said requested structured meta-data to said first entity (see Section LU.1.1 "The Lookup Service Model" lines 1-10; and Section LU.1.2 "Attributes" lines 1-9).

26. With respect to Claim 18, the Jini Specifications disclose:

generating at least one meta-data structure providing at least one semantic information element for each entity, wherein each said semantic information element describes a characteristic of an interface capability of one of said entities (see Section LU.1.1 "The Lookup Service Model" lines 1-10 and Section LU.1.2 "Attributes" lines 1-7);

collating said meta-data structures such that each semantic information element corresponding to the initiator's interface capability is collated with a corresponding semantic information element corresponding the responder's interface capability (see Section AR.2.1.2 "Lookup Service" lines 1-4);

analyzing the collated semantic information elements to determine the extent to which the initiator and the responder can generate a compatible interface; establishing in accordance with said analysis an interface between said initiator and said responder (see Section LU.1.1 "The Lookup Service Model" lines 1-16).

27. With regards to Claim 19, the Jini Specifications disclose:
generating structured meta-data providing at least one semantic information element describing a characteristic of each said entity (see Section LU.1.1 "The Lookup Service Model" lines 1-10 and Section LU.1.2 "Attributes" lines 1-10); collating the semantic information elements of each said entity with those stored semantic information elements of said at least one other entity (see Section AR.2.1.2 "Lookup Service" lines 1-10); and
analyzing said collated semantic information elements to establish the extent to which the interface capabilities of said at least two networked entities are compatible and generating in accordance with said established compatibility the adaptive software interface for the two entities (see Section LU.1.1 "The Lookup Service Model" lines 1-16).

28. With regards to Claim 20, the Jini Specifications disclose:
generating structured meta-data providing at least one semantic information element describing a characteristic of each said entity (see Section LU.1.1 "The Lookup Service Model" lines 1-10 and Section LU.1.2 "Attributes" lines 1-9);

collating the semantic information elements of each said entity with those semantic information elements of said at least one other entity (see Section AR.2.1.2 "The Lookup Service" lines 1-10); and

analyzing said collated semantic information elements to establish the extent to which the interface capabilities of said at least two networked entities are compatible and generating accordance with said established compatibility the adaptive software interface for the two entities (see Section LU.1.1 "The Lookup Service Model" lines 1-16).

29. With respect to Claim 21, the Jini Specifications disclose:

generating structured meta-data providing at least one semantic information element describing a characteristic of each said entity (see Section LU.1.1 "The Lookup Service Model" lines 1-10 and Section LU.1.2 "Attributes" lines 1-9);

collating the semantic information elements of each said entity with those semantic information elements of said at least one other entity (see Section AR.2.1.2 "Lookup Service" lines 1-4); and

analyzing said collated semantic information elements to establish the extent to which the interface capabilities of said at least two networked entities are compatible and generating in accordance with said established compatibility the adaptive software interface for the two entities (see Section LU.1.1 "The Lookup Service Model" lines 1-16).

30. With respect to Claim 22, the Jini Specifications disclose:

generating structured meta-data providing at least one semantic information element describing a characteristic of each said entity (see Section LU.1.1 "The Lookup Service Model" lines 1-10 and Section LU.1.2 "Attributes" lines 1-10);

collating the semantic information elements of each said entity with those semantic information element, of said at least one other entity (see Section AR.2.1.2 "Lookup Service" lines 1-4); and

analyzing said collated semantic information elements to establish the extent to which the interface capabilities of said at least two networked entities are compatible and generating in accordance with said established compatibility the adaptive software interface for the two entities (see Section LU.1.1 "The Lookup Service Model" lines 1-16).

31. With regards to Claim 23, the Jini Specifications disclose:

A software application capable of providing a semantic description of another application performing a computational process in a network, the semantic description having a predetermined structure which is invariant regarding the version of compiler used to generate said semantic description from said software application and said other application, said semantic description providing discernable features of at least one characteristic of said other application (see Section LU.1.1 "The Lookup Service Model" lines 1-10 and Section LU.1.2 "Attributes" lines 1-9).

32. With respect to Claim 24, the Jini Specifications disclose:

a communications network, a data network, a computer network (see Section DJ.4.1 "Properties of the Underlying Transport" lines 1-3 and Section AR.1.2 "Environmental Assumptions" lines 1-5).

33. With regards to Claim 25, the Jini Specifications disclose:

25. A software application as claimed in claim 23, wherein said at least one characteristic relates to a characteristic of an ability of said other application to interface with at least one other application performing a computational process over said network (see Section LU.1.1 "The Lookup Service Model" lines 1-10 and Section LU.1.2 "Attributes" lines 1-9).

34. With respect to Claim 26, the Jini Specifications disclose:

generating structured meta-data providing at least one semantic information element describing a characteristic of each said entity (see Section LU.1.1 "The Lookup Service Model" lines 1-10 and Section LU.1.2 "Attributes" lines 1-10);

collating the semantic information elements of each said entity where possible with corresponding semantic information elements of said at least one other entity (see Section AR.2.1.2 "Lookup Service" lines 1-4); and

analyzing said collated semantic information elements to establish the extent to which the interface capabilities of said at least two networked entities are

compatible and generating in accordance with said established compatibility the adaptive software interface for the two entities (see Section LU.1.1 "The Lookup Service Model" lines 1-16).

Conclusion

35. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. This includes: Foody et. al. "System and Method for Providing Interoperability Among Heterogeneous Object Systems" (US Pat. No. 5,732,270A); Liu "CORBA and Java-based Distributed Object Oriented System" (Euro. Pat. EP 000817046A2); Christensen "Web Services Description Language (WSDL) 1.0" (see the attached Notice of References Cited); Gong "JXTA: A Network Programming Environment" (see the attached Notice of References Cited); and Henning "Advanced CORBA Programming with C++" (see the attached Notice of References Cited).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John F Gianola whose telephone number is (571)272-3848. The examiner can normally be reached on Mon - Fri (8:30 - 5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kim Vu can be reached on (571)272-3859. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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